

the RARS **Exciter**

Raleigh Amateur Radio Society



Worldwide Friendship

August, 2003 Number 388



FIELD DAY 2003 FROM THE WHOLE GANG



The Exciter

The **Exciter** is the monthly newsletter of the Raleigh Amateur Radio Society. It is available in both printed and electronic form. The printed version is mailed to members just before each club meeting. The electronic form, in Adobe Acrobat PDF format, is e-mailed about a week earlier.

We solicit both articles and advertising. The deadline for submissions is first Friday of the month or Friday after the monthly meeting. Contact the Editor.

The views contained in the Exciter are those of the individual authors, and are not necessarily the views of the Editor, or the Raleigh Amateur Radio Society.

The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the Amateur Radio community in the greater Triangle area. In 1999, we incorporated a new RARS, and obtained 501(c)(3) Non-Profit tax status.

The objectives of the club are to promote worldwide friend-ship through Amateur Radio; to be of public service by providing radio communications in times of disaster, emergency, or civic need; to educate members in radio technique; and to provide training classes to assist in obtaining Amateur Radio licenses.

Anyone interested in Amateur Radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18.00 per year (from July 1 through June 30). Additional immediate family members pay \$5.00 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12.00 per year. Dues for non-licensed Associate members are \$9.00 per year.

Applications for membership may be obtained from the treasurer, or the RARS web site (www.rars.org).

Officers

President: Bernard Blackmon W4BRB
919-467-8719
bernardb@mindspring.com

Vice-President: Andy Peterson NI4S
919-845-6251
ni4s@arrl.net

Secretary: Jim Walter KG4FIJ
919-468-5358
jwalter@nc.rr.com

Treasurer: Greg Seamster KE4PAX
919-859-0029
ke4pax@arrl.net

Exciter Editor: Denyse Walter KG4CXR
919-468-5358
kg4cxr@nc.rr.com



INFO

RARS Repeaters in Raleigh:
145.13
146.64
224.64
444.525 (88.5 PL)

WEB SITE <http://www.rars.org>

NEXT RARS MEETING: August 5, 2003 TALES FROM DAYTON

RALEIGH AMATEUR RADIO SOCIETY MEETINGS

Date: Every first Tues of the Month

Location: Forest Hills Baptist Church, at Dixie Trail and Clark Avenue, in Raleigh

Time: 7:30pm, folks start showing up a bit before 7 to chat, brag and eat donuts.

VE TESTING: The RARS VEs will accept walk-in for testing on even months except April and December. Please bring a photo ID, your original current license if you have one, and any CSCEs you need for credit.. Check into the 8:00 pm net every night on the 146.64 repeater or www.rars.org for information.

RARS MEMBERSHIP DUES DUE

Membership renewals can be paid at RARS meetings, paid on-line, or mailed to the RARS treasurer. Mail To:
Greg Seamster
RARS Treasurer
1405 Leanne Court
Raleigh, NC 27606

RARS now accepts credit card payments online for new members and membership renewals. You can join or renew your membership online using a secure credit card payment process. See the RARS website www.rars.org to sign up for RARS membership or renew 1, 2, or 3 years

SUMMER RARS TECH LICENSE CLASS

The RARS summer Tech license class will be a two-Saturday "weekend warrior" type class, on August 2nd and 9th. We will also have introductory classes on Monday and Tuesday evenings, July 28 and 29.

For details, registration and flyer, see the class web page: www.rars.org/class.

Please pass the word. Lots of people have said they'd like to see a class like this.

There will be a VE session at the end of the 2nd day, at 7 PM on August 9th. The VE session is open to anyone, and all exam elements will be available. Thanks to the RARS VE's (any VE's who want to help, contact Joe and Liz White).

What about a GENERAL Class? People keep asking about that. RARS does not run one. But we would be happy to sponsor one if a coordinator/instructor wanted to volunteer. The Nortel classroom would probably be available. Contact me if you're interested in running a General (or Extra) class.
Gary Pearce KN4AQ@arrl.net

THE RARS AUCTION WILL BE OCTOBER 7, 2003

The RARS Auction, traditionally held in November, is being moved to October. That's because the Forest Hills Baptist Church is used as a polling place on the first Tuesday in November, and we have to move the meeting upstairs, making it more difficult to bring auction items into the building. So plan to sort through your treasures a month early.

All RARS members can obtain a membership card by calling Denyse KG4CXR 919-468-5358 or email KG4CXR@nc.rr.com

LET'S HAM IT UP AT A BASEBALL GAME

Carolina Mudcats vs Greenville Braves
Saturday, August 2nd
7:15pm at the 5 County Stadium
1501 NC Highway 39, Zebulon, NC

Tickets for a group of 25 or more will be \$5.50 (normally \$7.00)

RSVP to Hank Montgomery by phone (919) 577-1254 or K4HM@arrl.net if you are interested in going to the game.

146.88 145.39, 147.105, & 147.135
The Repeaters are supported by
PCRN, if you would like to donate
please make checks to:
PCRN
PO Box 12734
Raleigh, NC 27605

More info on PCRN:
www.pcrn.net

PUBLIC SERVICE EVENTS

PUBLIC SERVICE EVENTS ARE COMING UP. PLEASE LISTEN TO THE NETS FOR MORE INFORMATION!

W4RAL BBS PACKET NETWORK

By Gary KN4AQ

I recently saw a note on the TEARA (Triangle East Amateur Radio Assn.) mailing list that said the W4RAL BBS is back on the packet network. This is good news if you've got a packet station gathering dust and you'd like to see a flood of bulletins again. If you have packet that you've only used for APRS, or you don't have packet at all, you may wonder what this is all about.

A packet BBS, or "bulletin board system," looks and works a lot like a combination of e-mail, and an Internet mailing list – e-mail for private messages, and a mailing list for public bulletins.

Packet BBSs were similar to the landline bulletin boards that were popular for computer-to-computer connection before the Internet made them obsolete (RARS ran a landline bulletin board for several years in the early 90's). On the landline systems, you could send a personal text message to someone else, or you could post general messages to anyone (hence the "bulletin board" analogy). These messages could go to anyone else who connected to the bulletin board with their computer, or to any other bulletin board that your local BBS swapped data with.

The old landline systems had a hodge-podge of dial-up telephone connections, though that got more sophisticated as time went on. They would collect messages for a few hours, or all day, and then make an automated phone call and dump everything into a computer that acted as a central clearing-house. Then they'd download all the bulletins and personal mail destined for their own users. This usually happened in the middle of the night, because in those "old" days, long distance rates were lower at night. Delivery was anywhere from a few hours to 24 hours.

It's easy to see why the Internet, with instant, ubiquitous delivery, quickly killed the landline BBS system.

The Amateur Radio packet BBSs did the same thing as the landline systems – general bulletins and individual mail. But instead of using the phone lines for passing messages, they used Amateur Radio, both VHF for local connections and some long-distance forwarding, and HF for cross-country and international connection. Delivery times depended on the distance covered. Mail from Raleigh to Greensboro would be delivered within an hour. Raleigh to Los Angeles would take about a day. I remember getting up every morning, logging into the local BBS, picking up my mail and reviewing the bulletins that arrived overnight. I'd check the packet mail first, and then dial up for the mail on the landline BBS. That was when getting "e-mail" was fun, and not the chore it is today!

The W4RAL BBS is run by Ronnie Reams WA4MJF, from his home in eastern Wake County. It is a computer running bulletin board software (I think Ronnie's running one called

"FBBS"). The computer is connected to radios and TNCs that let the BBS send and receive messages as far as the connections can forward them – worldwide, if there are enough connections. In the late 80's and early 90's, the packet BBS network was fairly extensive, capable of sending Amateur Radio packet messages to most places in the US and many countries around the world, all on Amateur Radio.

The Internet wounded the packet BBS system, but didn't kill it the way it obliterated the landline BBS system. All the pieces of the packet network were (are still) owned by individuals, or some by clubs. Interest in packet peaked in the mid 90's, and fell off dramatically as the Internet became popular. You can see why: a cross-country or international packet message might take 24 to 48 hours to deliver, and would be limited to a few kilobytes of data (a few dozen lines of text, with no attachments... certainly no pictures or video files). Your Internet e-mail will be delivered in a few seconds, and you can send a few Megabytes of data. Of course, you are relying on the services of the phone or cable company. The packet system was all ham radio, a "backup" for emergency traffic, and that, plus the independent spirit of some hams, has kept some of it alive.

Packet was popular, but it never achieved a "critical mass" of operation. Today, almost every ham has a computer and e-mail. At its peak, maybe one in 50 active hams had packet. That's a wild guess, and may be still an exaggeration. When even that interest waned, many of the hams and clubs that supported the radios and computers that made up the network took their systems off the air. Some cities went "dark" when their BBS was closed up. Some BBSs, like W4RAL, stayed on the air, but lost their connection to the outside world when the radio links they depended on were turned off.

One of the strengths of the packet network became one of its big problems. Unlike the telephone BBS network, the packet system didn't have any central collection points. Each message had a "destination," and each BBS had a list that told it where to send the message to keep moving it toward that destination. If one route failed, the BBS probably had a backup route to try. But if all the packet nodes surrounding a city were taken down (as they were around Raleigh), the city was isolated, with no place to pick up and deliver data. Some Amateur Radio packet data is carried on the Internet, but that begs the point of Amateur Radio being a backup for the landline system for emergency traffic.

The W4RAL BBS has a new connection to a system in Lynchburg, VA, and is receiving bulletins. The illustration on page 5 shows what a packet BBS bulletin list looks like. I picked one of the messages in the list to read, so you'll see that, too (the message about "how to call CQ" on VHF).

Continued on page 8

```

1469 BF 1001 MISC @WW W4NTI 0529/1055 Re: PSK and/or MFSK on 2 metre
1468 BF 1565 OIL @WW F6IQA 0529/1053 Re: Why not 'using' oil anymore
1467 BF 1703 ANTENNA@WW M1BYT 0529/1052 Re: Help: Copper Cactus ?
ENTER=continue, A=Abort, R/U=Read --><>
1466 BF 2358 HBREW @WW G0FTD 0529/1048 Novel cw keyer ideas.
1465 BF 2137 PONDER@USA KI5CT 0529/1041 +Weeds in the Field
1462 BF 1135 UHFUHF@WW WA8ULX 0529/0307 Re: Echolink
1461 BF 3933 KEP @ARRL W4DPH 0529/0305 ARLK041 Keplerian data
1460 BF 889 UHFUHF@WW WA8ULX 0529/0302 Re: Echolink
1459 BF 1081 ALL @WW GM7HUD 0529/0300 Re: Spam with paket...so I sti
1458 BF 1582 ALL @WW UK6BE 0529/0259 Re: Spam with paket...so I sti
1457 BF 1661 QUAD @WW PA7KK 0529/0259 Interaction other objects ?
1456 BF 2132 ANTENNA@WW W5LZ 0529/0258 Re: Super J-Pole better than S
1455 BF 897 UHFUHF@WW WA8ULX 0529/0256 Re: Re: Re: Echolink
1454 BF 4208 AGCW @WW G4BKF 0529/0255 Re: G4BKF > Re: UK5QX
1453 BF 1733 PROBLE@WW UK6BE 0529/0251 Unwanted suffix.
1452 BF 919 MARKET@WW KC5DGC 0529/0249 WTD: Micor UHF Repeater/Base 7
1451 BF 989 ANTENNA@WW W5LZ 0529/0248 Re: Resistive SWR
1450 BF 964 UHFUHF@WW WA8ULX 0529/0246 Re: 10m on Echolink
1449 BF 2597 UHFUHF@WW KA4IQD 0529/0243 Re: Correct way to call CQ?
1448 BF 2971 AGWPE @WW UE2PKT 0529/0242 Re: Help...
1447 BF 1266 ANTENNA@WW KB7QHC 0529/0240 Re: Super J-Pole better than S
1446 BF 860 ANTENNA@WW W5LZ 0529/0239 Re: Health risks by using open
ENTER=continue, A=Abort, R/U=Read --><<r 1449>

```

```

From : KA4IQD
To : UHFUHF@WW
Type/status : BF
Date/time : 29-May 02:43
BID (MID) : 3K20DV0E0ROP
Message # : 1449
Title : Re: Correct way to call CQ?
Path: !WD4ELJ!KR4MA!WB7AWL!HA3PG!WB0TAX!IK1ZNW!7M3TJZ!ON0BEL!UE2WXX!UE2PKT!

```

```

Message-Id: 3K20DV0E0ROP
From: gw3tmh@ue2pkt.#qbc.qc.can.noam
To: uhf-uh@ww

```

On Sat, 24 May 2003 18:34:35 GMT, "Greg" <cputec@hotmail.com> wrote:

>Hi..... I'm newly licensed and I'm unsure if I'm calling CQ properly.
>

>What is the proper way to call CQ in these various situations?.....
>

ENTER=continue, A=Abort, N=Next, C=cancel paging --><>

>1) Calling anyone on an FM Repeater? (This is KC8WPC listening)????

Just say your call. No need for "listening" or anything like that.
While adding something after your call will work in most areas just
your call should work anywhere.

>2) Calling anyone on an FM Simplex Frequency???

Same.

>3) Calling a particular station on an FM Repeater??

Their call your call. KA4AAA KA4IQD. No answer repeat once. Still
no answer just your call so anyone else wanting to use the
repeater/frequency knows your are clear. No need for "nothing heard"
as that's pretty obvious, no need for "negative contact" because that
sounds pretty stupid.

>4) Calling a particular station on an FM Simplex Frequency??

ENTER=continue, A=Abort, N=Next, C=cancel paging --><>

Same.

>I know this is a newbie question, any help would be greatly appreciated!

How you gonna know if you don't ask? You could listen and see what
others are doing but you may be listening to the local repeater all
the cbers moved to so that may not help. Best thing to do on fm is
always be yourself and don't use q codes or made up radio words like
"destinated". If you wouldn't say it to a person sitting in the room

MINUTES OF THE RARS BOARD MEETING,
TUESDAY, MAY 20, 2003

The RARS board meeting was held at Forest Hills Baptist Church on Tuesday, May 20, 2003. Members present were: AB4OZ, K1RCB, K4HF, K4HM, KE4PAX, KG4CXR, KG4FIJ, KN4AQ. Total present: 8.

The meeting was called to order by KN4AQ at 7:30 PM.

On motion by K4HM, second by KG4CXR, the April 2003 board meeting minutes were approved.

V.P. Report: No report.

Treasurer's Report (KE4PAX): There are currently 301 members.

FM Committee (KN4AQ): Still working on the 145.13 repeater.

Exciter (KG4CXR): June issue is coming along well. Looking for ideas for cover photos.

Net Manager: No report.

Webmaster: KE4PAX reported that PayPal is working well on our web site.

Membership Services (KG4CXR): Membership renewals due July 1.

Hamfest (K4HM): Post Event meeting was held on Apr 27. Discussed this year's event, and how to improve next year. Many ideas were discussed. More to come.

Field Day (KN4AQ for N4HAF): Planning is going well.

Public Information (KN4AQ): Nothing to report.

Education (KN4AQ for W4NOT): Considering holding a "weekend warrior" Technician class this summer. Would be two 8-hour Saturdays, or two weekends of 4-hr Sat/4-hr Sun each. More to come.

VE Team: No report.

Public Service (K1RCB): Planning underway for MS-150 in Sept and Autism event in Oct. K1RCB contacted Harry Bridges who lives on the coast and said there will be many opportunities to volunteer for "Year of Flight" events down east.

ARRL Liaison (K4HF): Still opportunities to take free courses (funded by Homeland Security) on the ARRL web site.

W4DW/W4RNC Trustee: No report.

Special or Ad Hoc Committees: K4HF will start recruiting in August for 2004 board officers and members.

Unfinished Business:

KE4PAX reported that financial review should be done this summer. Will wait til June board meeting to schedule it. Report on Handi-Ham Camp was tabled until next month due to absence of W8HYD.

Ref KG4HDT request for RARS to contribute to the purchase of digital equipment for ARES training. Tabled until next month.

Ref KE4PAX proposal for fundraising food booth at State Fair. He's still looking into it.

KE4PAX attended an IRS class. Was very worthwhile... will have a formal report at next board meeting.

KE4PAX presented the final draft of the 2003-2004 budget to the board. The board reviewed and discussed. Upon motion by AB4OZ, 2nd by K1RCB, and unanimous approval, the budget will be presented to the general membership.

New Business:

K1RCB offered to partially fund a post card mailing to advertise upcoming Skywarn spotters classes. After discussion, it was decided that due to time constraints it would be better to instead have KE4PAX send a bulk email to RARS members.

AB4OZ requested the annual RARS auction be moved from November to October due to conflict with election dates. Board agreed. Deferred to Vice President.

KN4AQ reported that he received no response for volunteer to coordinate amateur radio portion of upcoming Hurricane Preparedness Fair.

Upon motion by KG4CXR the meeting adjourned at 9:26 PM.

RARS NEW MEMBERS

June 2003

We would like to welcome our new members to RARS. Thank you for considering us for your amateur radio club.

Gary KE4DNL
Dave KD4THS

NET REPORTS FOR JUNE, 2003

8:00PM DAILY: RARS Evening Net

**Participants 505
Traffic 26/25
Time 720 Minutes
Sessions 30**

**8:30PM SAT: Tech & Traders Net
9:00PM MON: SWL/SIG**

**Participants 56
Traffic 1/1
Time 383 Minutes
Sessions 7**

Target Your Market

Our Complete Line of Direct Mail and Printing Services Include:

- Custom Design & Layout
- Professional Printing
- Mailing Lists
- Mailing Labels
- Ink Jet Addressing
- Sorting - Folding
- Inserting - Metering
- Hand Signatures
- *Personal Service*

**One-Stop
Shopping
Convenience**

HPM
HIGH PERFORMANCE MARKETING

"For All Your Direct Mail & Printing Needs"

919-870-9915

J. Jay Langley
PO Box 97744
Raleigh, NC 27624
fax: 919-844-0871
PostcardS@bellsouth.net

Continued from page 5 W4RAL BBS Packet

If you have a packet station, the easiest way to connect from the Raleigh area is to dial up 147.54 MHz (yes, it's in the voice simplex part of the band, not the packet part, a legacy of some very old days back in the 1980's), and connect to W4RAL-7. That's a node that will relay your signal to the BBS, which is also on 147.54, but has a low antenna. Once connected to W4RAL-7, connect to W4RAL, or EWBBS (East Wake BBS). You'll be connected to the BBS.

I won't go into all the details of operating the BBS. That would fill a few pages. Once you're connected, it will tell you now to get "help" and a tutorial on operation, all over packet. Or you can go to the TEARA web site (www.TEARA.org). There's a lot of packet information there.

Times have changed. I don't find e-mail "fun" much anymore. There's too darned much of it. And I'm not likely to wait for the relatively slow packet BBS to churn out a list of bulletins I don't care about. You, though, might still find it interesting.

But as slow as it is, packet is a lot faster than a dead Internet connection after a storm has wiped out the power and phone lines. I wish more hams had been interested enough to keep the nodes alive and growing. On the horizon, we can see some potential replacements. The 802.11b 2.4 GHz systems operated under Amateur Radio rules might take over. Icom's new D-STAR system might catch on. Something unimaginable might fill in. All these would be vastly faster and more capable than the packet network. But they all have yet to be built on any large scale and be adopted by thousands of hams. So today, log onto W4RAL and see what WA8ULX has to say about Echolink.

Red Cross/Lowes Hurricane Fair 2003 was held on June 21. Lots of RARS members helped Wake County ARES/RACES demonstrate Amateur Radio emergency communications at the second annual Red Cross/Lowes Hurricane Preparedness Fair. Bob Conder K4RLC and Bob Breyer K1RCB organized the display, with help from Wake County EC Tom Brown N4TAB and many other hams. The weather was much cooler than last year, and the fair was set up in front of the Lowes entrance, rather than off to the side of the parking lot. That helped boost traffic, though attendance by the public might still be considered light.



Left: Info on ARES and ham radio



Right: Max KO4TV setting up the HF for communications



Liz KF4UQZ, Mary KG4OQA, and Tom N4TAB chat at the Lowes Hurricane Fair



Guest learning about ham radio



Bob K4RLC working with HF

Photos by Gary KN4AQ

MINUTES OF THE RARS MEETING, Tuesday, July 1, 2003

The meeting was called to order at 7:40 PM by Bernard Blackmon W4BRB.

Treasurer's Report (Greg KE4PAX): There are currently 307 members, . The 2003-2004 membership renewals are due.

ANNOUNCEMENTS:

- Neal N4HAF reported on Field Day. Everyone had a great time. Scores are not in yet, but it appears we had 300-400 less QSO's than last year. Great success... thanks to all the band captains.
-
- Hank K4HM announced plans for a group outing to a Carolina Mudcats baseball game on Sat Aug 2nd. See Hank if you're interested in participating.
- Gary KN4AQ announced plans for the first "Weekend Warrior" technician class, to be held on Sat. Aug 2nd, and Sat. Aug 9th, 9 AM to 6 PM both days. There will be two scheduled pre-meetings, on Jul 28 and Jul 29. Only one of the pre-meetings must be attended.

PROGRAM: Andy NI4S, with the assistance of Bert Bailey W4FMN, gave an excellent overview of the MARS (Military Affiliate Radio System) program.

Door Prizes won by: AG4XR, KF4VXJ, KE4DST, W2JNW, and KF4UQZ.

Meeting adjourned at 8:20 PM.

- Digital print-on-demand
- Both small and large format
- Color and black & white
- High-volume print solutions
- One-to-one marketing solutions
- Full service bindery and finishing

www.docusourceofnc.com

951 Aviation Parkway
Suite 600
Morrisville, NC 27560
919-459-5900

Centrally located in the heart of the Triangle!



relax; **docu**source it.



Dale W4AUV Charlie W4VFJ (middle) Bob NA4G



Johnny WA9SZL Rick KB4TKQ



Dave K4SAN 6 M



Jim Dubreck, Mary Ramsey, Rick Yost, Ginger Merkle



Joey KE4DRI Unlicensed friend 40M



Now we know what the duct tape and plastic was for



John N1GMV, Jim N4BYO, Rick N4VQT, Frank KA2FWC, Mike KE4OKR

Photos by
Tim W4NOT
And Rick
N4YRO



Former RARS President N4BYO becomes the RARS spokesman on WB-22 TV.

**The Central Carolina
Skywarn Net Meets
Tuesdays at 9:15 PM
on 146.88 Repeater**



Remember to give damage reports AFTER the storms as well as DURING the storms.

John VanPelt K4JVP is the (Emergency Coordinator (EC) for Central Carolina Skywarn. 919-781-2787.

John (left) with Jeff Or-rock (right) Emergency Coordinator at the NWS



Photo by Denyse KG4CXR

Please listen to the NOAA weather frequency for current reports.

NWS CRITERIA FOR SKYWARN NET

By John K4JVP

A net will only be brought up after having received a request from the NWS to do so or if they're really busy and a WARNING has been issued for a 'non-pulse' event, and bringing up the tones will only be done by the EC, an AEC or an NCO who has been asked to do so. In the Summer, it's likely that some SEVERE storms will be pulse types, will only last a few minutes and die before a net can even be brought up. If any NCO's or spotters who are on the repeater get reports that meet criteria for these storms, I would encourage them to phone them in to the NWS, but we won't bring up a net for a twenty minute event unless specifically asked to by the NWS.

Severe thunderstorms are storms producing hail three quarters of an inch (penny size) or larger and/or winds of 58 miles per hour. If the hail's smaller than that and/or the wind is 57 mph or less, it's not considered SEVERE by the NWS and will not GENERALLY warrant a net, although again, spotters or NCO's are encouraged to forward all reports to the NWS via phone. All thunderstorms produce lightning which IS dangerous, most storms produce heavy rain for a period, but if they don't have 58 mph winds and/or three quarter inch hail, they ARE NOT SEVERE. We may occasionally be asked to bring up a net in the case of storms that may cause flooding. Again, that'll be at the NWS' discretion.



Every Wednesday 9:30 145.19



Join Us At the RARS Dinner



**On 4th Tuesday, 6:30 pm at
HARD WOK on Glenwood Ave.**

HAMFEST CALENDAR

August 9 *	Fayetteville, NC
August 30-31	SHELBY, NC
October 12 *	Maysville, NC
October 25	Sumter, SC
November 8	Myrtle Beach, SC
November 16*	Benson, NC

* Date is not confirmed

Courtesy of the SERA Repeater Journal



FIELD DAY 2003

Results will be in the Next Issue of the *EXCITER*. Many thanks to the field day Chairman Neal N4HAF for a great job. Thanks to the Field day Captains Dave Thomas K4SAN (UHF/VHF), Johnnie Mayfield WA9SZL (160 CW), Mike Murphy WA4BPJ (40SSB), Neal Fisher N4HAF (40CW), Rick Yost N4VQT (20SSB), Tim Ellison W4TME (20/80 Digital), Chuck Littlewood K4HF (15 CW/SSB), Matt Sickles W2BYV (10 CW/SSB and Digital)



Matt W2BYV 10M phone



Mike KD4OKR with Lauren (in pink) and friend
20 M Phone

Photos by Tim Nicholson W4NOT